**Diversity and Interdependence of Life:**

**Classification:**

classification systems: process by which scientists group living organisms

taxonomy: the scientific study of how things are classified

molecular sequence data: data to analyze the genetic material of organisms

morphological species concept: characterizes a species by body shape and other structural features

biodiversity: the variety of life in the world or in a particular habitat or ecosystem.

cladogram: Diagram that shows the evolutionary relationships among a group of organisms

**Ecosystems:**

ecosystems: A biological community of interacting organisms and their physical environment

carrying capacity: Largest number of individuals of a population that an environment can support

interspecies competition: competition between two different species

intraspecific competition: competition between members of the same species

immigration: movement of individuals into a population

emigration: movement of individuals out of a population

biomagnification: The increase in chemical concentration in animal tissues as the chemical moves up the food chain

flow of energy: The transfer of energy through an ecosystem from the sun (usually) to producers, to herbivores, to carnivores, and ultimately to decomposers. In the end, all of the energy that originally reached earth from the sun dissipates into the atmosphere and outer space as heat. Energy cannot be recycled, and life on earth depends on constant influx of energy from the sun to replace what is lost.

cycles of matter: Matter is recycled within and between ecosystems

biogeochemical cycles: process in which elements, chemical compounds, and other forms of matter are passed from one organism to another and from one part of the biosphere to another

homeostasis: process by which organisms maintain a relatively stable internal environment

exponential growth model: growth model that estimates a population's future size after a period of time based on the intrinsic growth rate and the number of reproducing individuals currently in the population

logistic growth model: a growth model that describes a population whose growth is initially exponential, but slows as the population approaches the carrying capacity of the environment

population growth rate: the number of offspring an individual can produce in a given time period, minus the deaths of the individual or its offspring during the same period

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